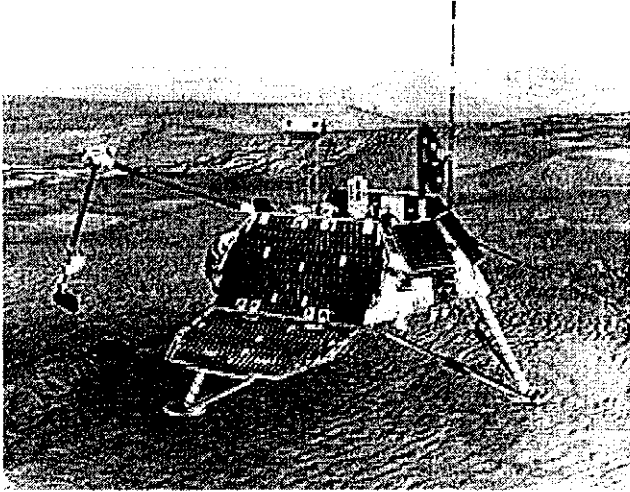


# Metric error caused Crash of Mars Orbiter

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WASHINGTON - Failure to convert English measures to metric values caused the loss of the Mars Climate Orbiter, a spacecraft that smashed into the planet instead of reaching a safe orbit, a NASA investigation confirmed Wednesday.



NASA VIA AP

**The Mars Climate Orbiter, shown in an artist's rendering, was to relay information from another spacecraft on the planet's surface.**

The orbiter, a key craft in the space agency's exploration of the red planet, vanished after a rocket firing Sept. 23 that was supposed to put the spacecraft on station around Mars.

An investigation board concluded that NASA engineers failed to convert English measures of rocket thrusts to newtons, a metric system measurement of rocket force. One English pound of force equals 4.45 newtons. A small difference between the two values caused the spacecraft to approach Mars at too low an altitude.

The investigation board found that the error went undetected in ground-based computers. Also, the mission's navigation team had an imperfect understanding of how the craft was pointed in space.

The report also said that the mission navigation team was overworked and not closely supervised by independent experts.

The orbiter was launched Dec. 11, 1998. Along the way, engineers sent instructions to the craft to fire rockets to correct its path toward Mars. It was in these rocket firings that the error occurred.

From its station above the red planet, the orbiter was to relay signals from the Mars Polar Lander, which is scheduled to touch down on Mars next month.

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